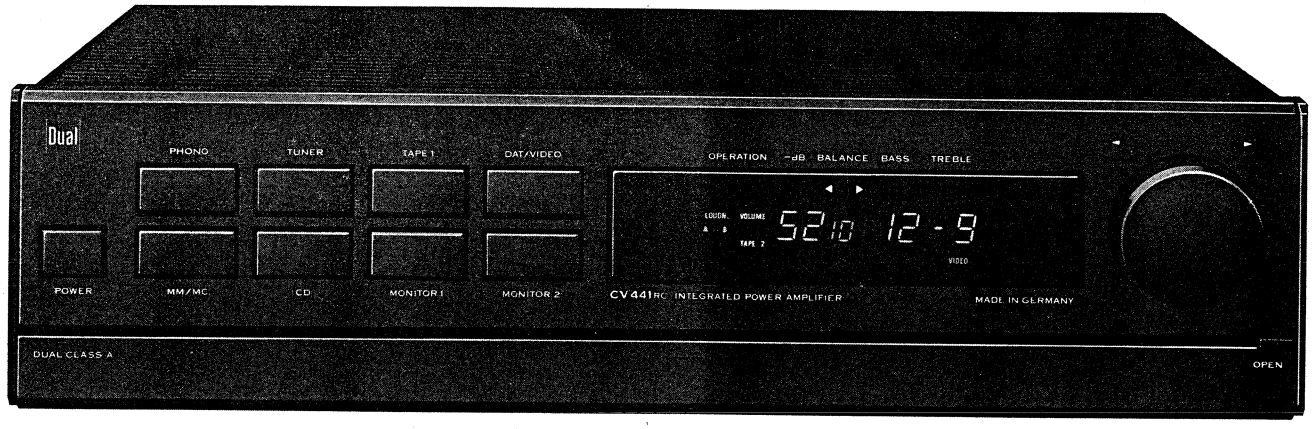
Service-Anleitung
Service Manual
Instructions de Service

CV 441



Technische Daten (typische Werte)	**Technical Data (typical value)**	**Caractéristiques techniques (valeur caractéristiques)**	**CV 441**
Ausgangsleistung (DIN) Musikleistung Sinus-Dauertonleistung	**Rated output (DIN)** Music power Rms continuous power output	**Puissance de sortie (DIN)** Puissance musicale Puissance efficace	**8 Ω** **4 Ω** 2×185 W 2×200 W 2×145 W 2×200 W
Klirrfaktor (bei Nennleistung – 6 dB) 20 Hz 1 kHz 20 kHz	**Harmonic distorsion** (continuous power – 6 dB) 20 Hz 1 kHz 20 kHz	**Taux de distorsion** (puissance efficace – 6 dB) 20 Hz 1 kHz 20 kHz	 0,003 % 0,003 % 0,006 %
Leistungsbandbreite (DIN 45500)	**Power band width (DIN 45500)**	**Bande passante (DIN 45500)**	5 Hz–100 kHz
Übertragungsbereich 1 Watt–3 dB Tuner, CD, Tape, Video Phono MM/MC	**Frequency response** 1 Watt–3 dB Tuner, CD, Tape, Video Phono MM/MC	**Bande passante** 1 Watt–3 dB Tuner, CD, Tape, Video Phono MM/MC	 3 Hz–270 kHz 10 Hz– 50 kHz
Eingänge Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	**Inputs** Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	**Entrées** Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	 280 mV/47 kΩ 3 mV/47 kΩ 250 μV/ 5 kΩ
Ausgänge Druckklemmen für zwei Lautsprecherpaare, Ausgang 1 und Ausgang 2 schaltbar 1-Koaxialbuchse 1/4 inch für Kopfhörer 1-Line-Ausgang an Tape 1 1-Line-Ausgang an Tape 2/DAT/Video	**Outputs** Press-type terminal strips for two sets of speakers, output 1 and output 2 switched 1 coaxial jack 1/4 inch for headphone 1 Line output to Tape 1 1 Line output to Tape 2/DAT/Video	**Sorties** Barres a ressort pour deux paires de hauts-parleurs, sortie 1 et sortie 2 commutables 1 prise coaxiale de 1/4 inch le raccordement du casque-écouter 1 sortie Line sur la price Tape 1 1 sortie Line sur la price Tape 2/DAT/Video	 8–16 Ohm 8–2000 Ohm 280 mV/2,5 kΩ 280 mV/2,5 kΩ
Fremdspannungsabstand (DIN 45500) bezogen auf Nennleistung Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC bezogen auf 2×50 mW Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	**Signal-to-Noise ratio (DIN 45500)** related to nominal output Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC related to 2×50 mW Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	**Rapport/signal bruit (DIN 45500)** rapporté à la nominale Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC rapporté à 2×50 mW Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	 100 dB 75 dB 65 dB 70 dB 68 dB 62 dB
Geräuschspannung Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	**Noise voltage** Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	**Tension perturbatrice** Tuner, CD, Tape 1, Tape 2/DAT/Video Phono MM Phono MC	 103 dB 80 dB 70 dB
Übersprechdämpfung bei 1000 Hz zwischen den Kanälen zwischen den Eingängen	**Cross-talk attenuation** at 1.000 Hz between the channels between the inputs	**Rapport de diaphonie** à 1000 Hz entre les canaux entre les entrées	 75 dB 75 dB
Dämpfungsfaktor (8 Ohm)	**Damping factor** (8 ohms)	**Facteur d'amortissement** (8 ohms)	2 kHz/180 20 kHz/160
Regelbereiche Volume (2 dB-Schritte) Pre Volume (2 dB-Schritte) Balance (2 dB-Schritte) Höhen (3 dB-Schritte) Bässe (3 dB-Schritte)	**Control range** Volume (2 dB steps) Pre Volume (2 dB steps) Balance (2 dB steps) Treble (3 dB steps) Bass (3 dB steps)	**Plage de réglage** Volume (pas de 2 dB) Pre Volume (pas de 2 dB) Balance (pas de 2 dB) Treble (pas de 3 dB) Bass (pas de 3 dB)	 80 dB 14 dB 18 dB ± 12 dB ± 12 dB
Leistungsaufnahme Standby-Betrieb Nennleistung an 8 Ω	**Power consumption** Standby nominal power (8 Ω)	**Consommation de puissance** à vide puissance nominale (8 Ω)	 ca. 5 W ca. 480 W
Netzspannungen	**Line voltages**	**Tensions secteur**	230 V

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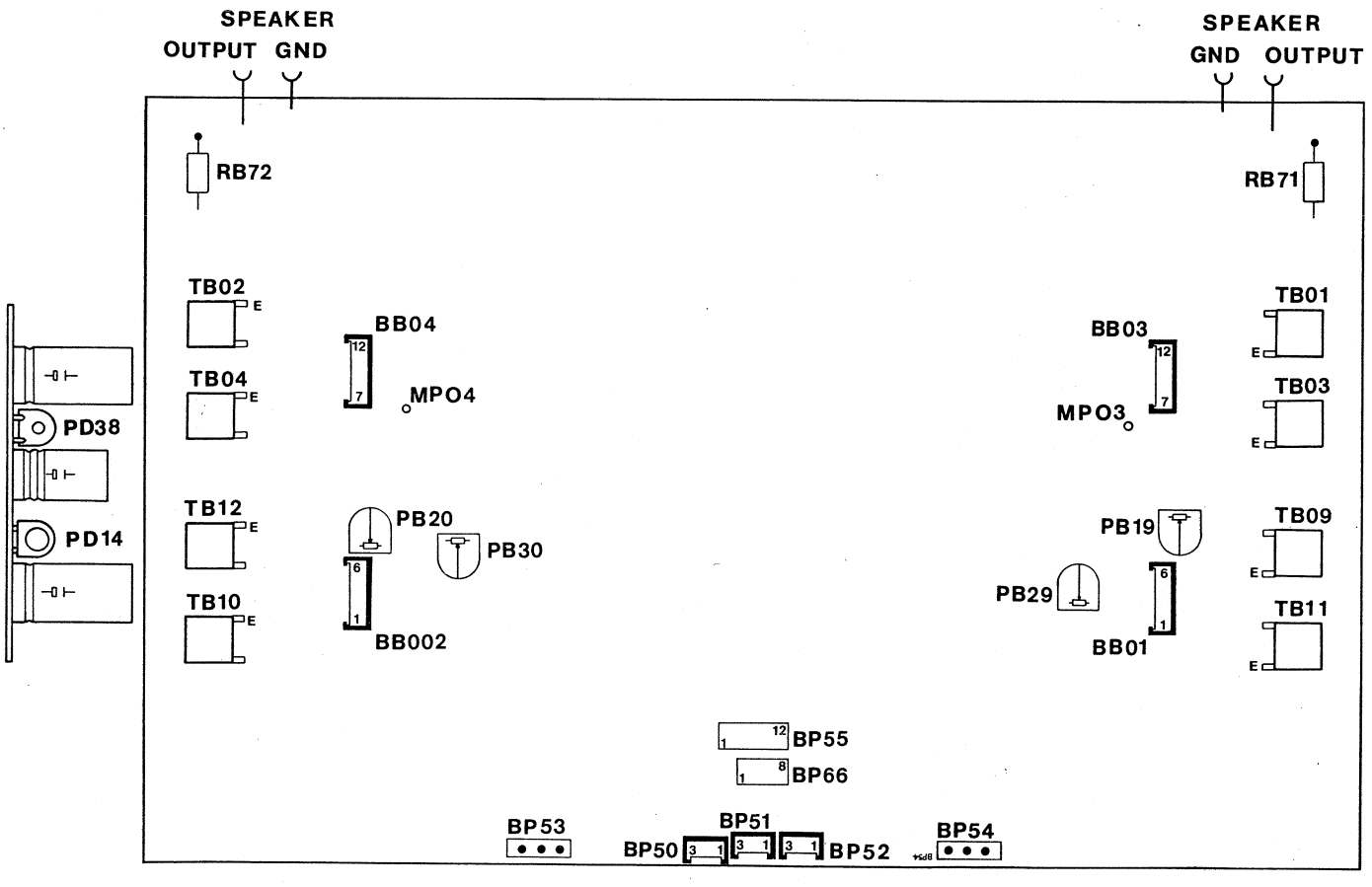
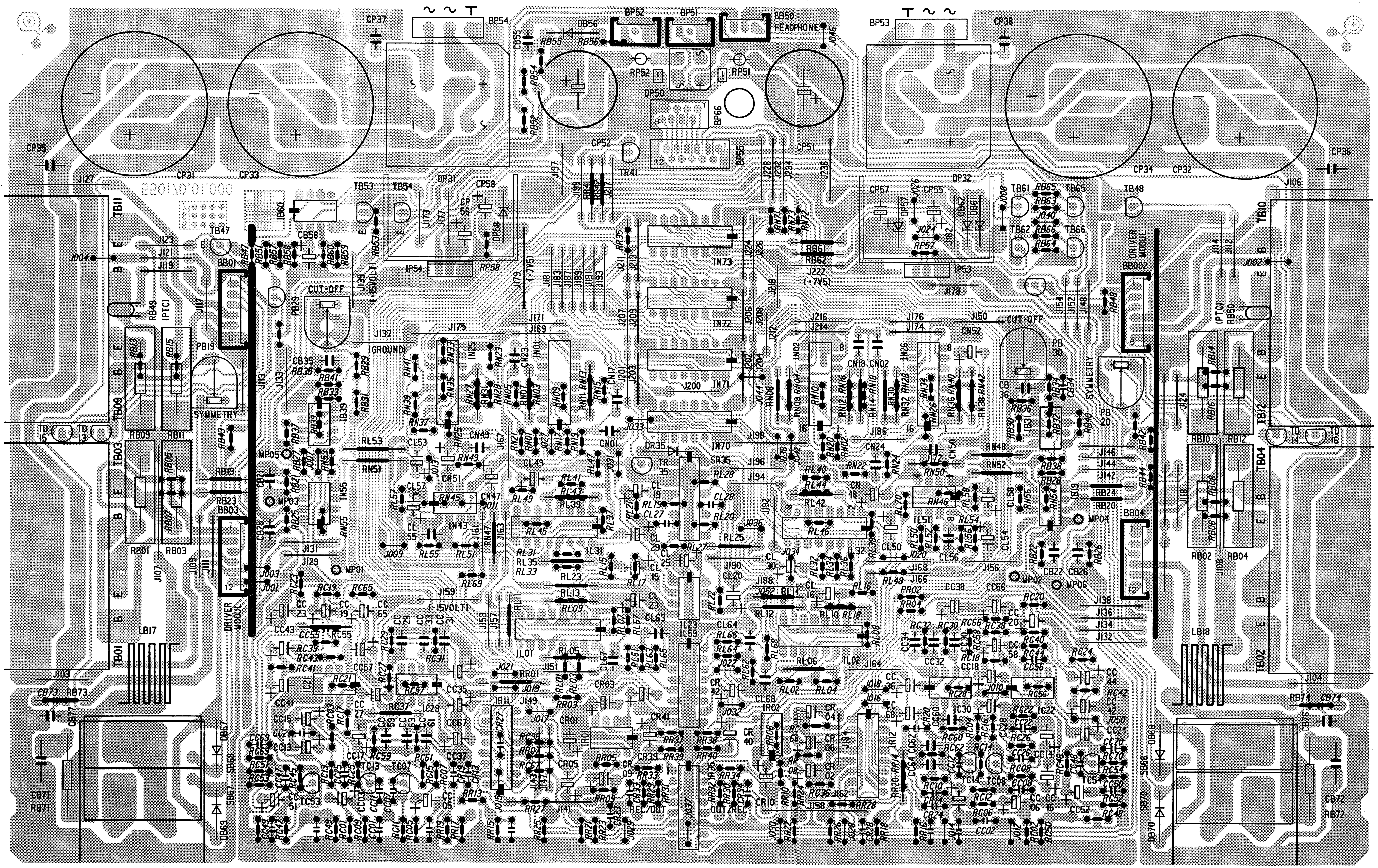
Abgleichanleitung CV 441 · Alignment Instruction CV 441

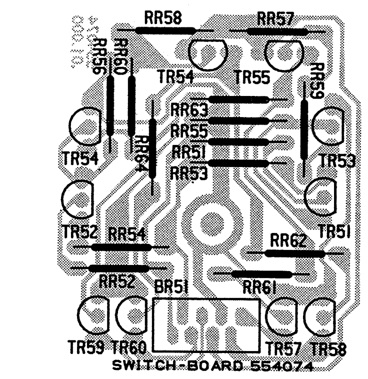
Signalquelle Signal source	Einstellung Signalquelle Signal source adjustment	Einstellung Gerät Unit adjustment	Anzeigegerät Anschluß Indicator connection	Abgleichposition Adjustment position	Abgleich, Bemerkung Alignment, Remarks
Ruhestrom · Quiescent Current					
		Power: On Tuner: On Volume: Minimum oder/or Muting on – ohne Last-R – without load-R – kalter Zustand – cold-state	DC-Voltmeter an/to RB 71 Emitter: ↕ TB 01 + TB 09 ↕ TB 03 + TB 11	PD 14 rechter Kanal (R-CH) right channel (R-CH)	15 mV 15 mV + 15 mV = 30 mV (Differenz ± 50 % – zwischen den Transistoren – between transistors)
			RB 72 Emitter: ↕ TB 02 + TB 10 ↕ TB 04 + TB 12	PD 14 linker Kanal (L-CH) left channel (L-CH)	
Offset					
		Power: On Tuner: On Volume: Minimum	DC-Voltmeter an/to Speaker output	PD 38 (L-CH) PD 38 (R-CH)	0 mV (± 5 mV)
Symmetrie und Strombegrenzung · Symmetry and Current Limeting					
NF/AF-Generator an/to Tuner	1 kHz ca. 300 mV	Power: On Tuner: On Volume: Maximum Speaker: 8 Ohm Lastwiderstand Load-resistor	Oscilloscope an/to: MP 03 (R-CH) MP 04 (L-CH) Speaker GND	PB 19 (R-CH) PB 20 (L-CH)	– auf gleich hohe Sinushalbwelle, – to same sinus-halfwave – (doppelte Frequenz) – (double frequency)
	0–200 mV	Speaker: 2 Ohm/100 W Lastwiderstand Load-resistor Kalter Zustand Cold-state	NF/AF-Voltmeter to Speaker output	PB 29 (R-CH) PB 30 (L-CH)	16 V – Strombegrenzung – gerade noch nicht abgeschaltet, – current limeting – just not switches off

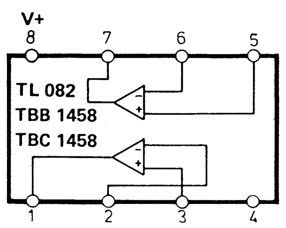


Grundplatte / Main board / Platine principale

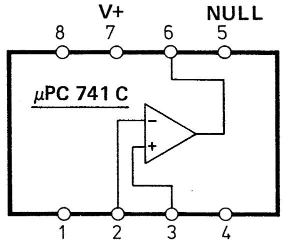


SUB RMB 1600 MD

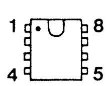




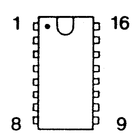
LM 393
LM 833
RC 4558



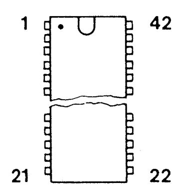
MC 1741



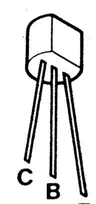
LM 893
LM 833
RC 4558



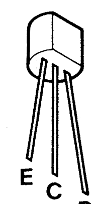
MC 14051
MC 14052



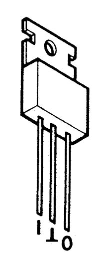
HD 44840



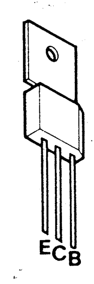
BC 327 BC 550
BC 328 BC 557
BC 338 BC 558
BC 546
BC 547
BC 548



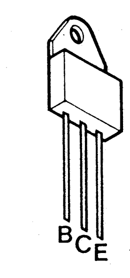
BF 423



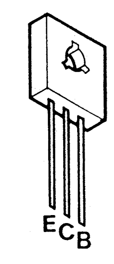
MC 7815



BF 869
BF 870

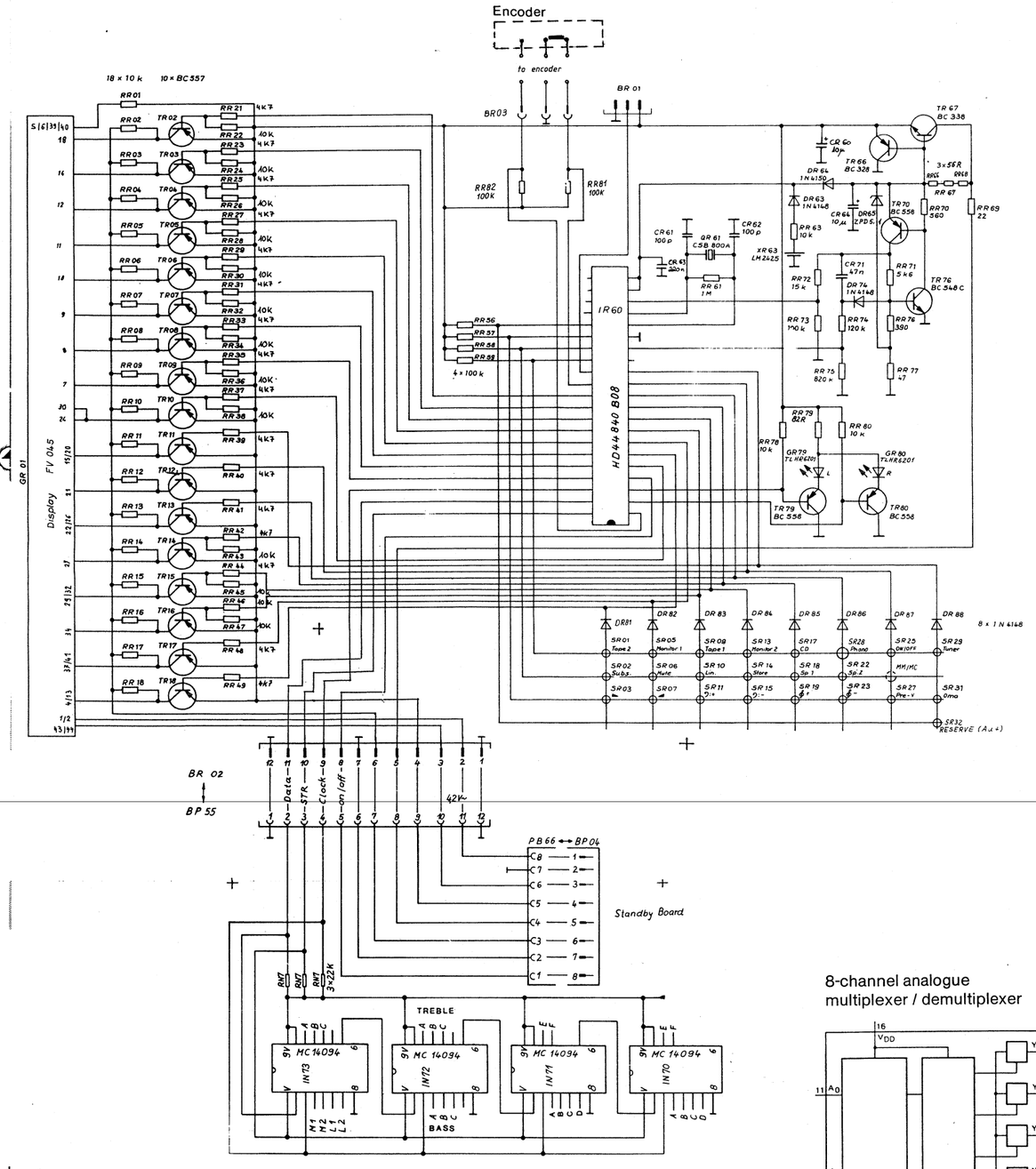


BDV 66 D
BDV 67 D



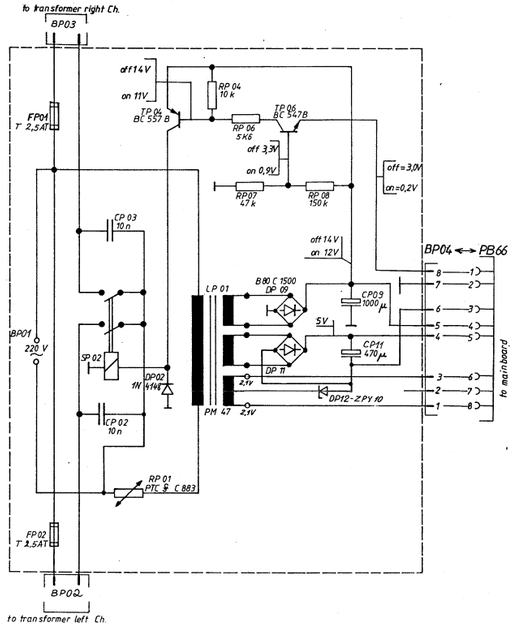
MJE 340
MJE 350

Display-Tastenplatte / Display-Keyboard / Platine de commande

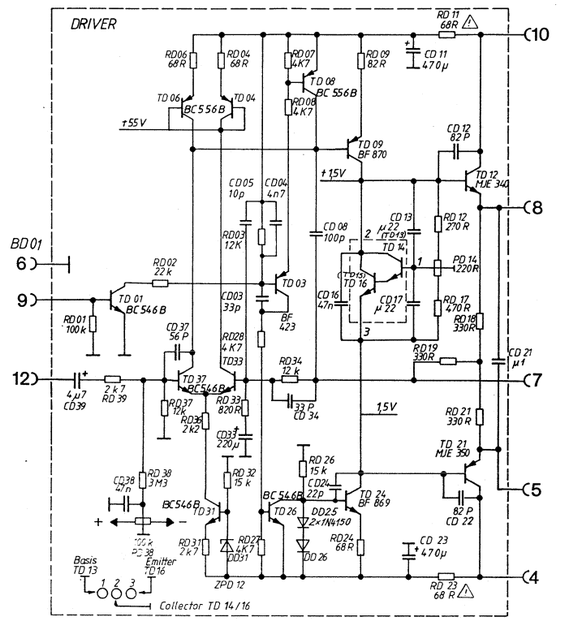


Input Pin			Input Channel Pin
9	10	11	
L	L	L	13
L	L	H	14
L	H	L	15
L	H	H	12
H	L	L	1
H	L	H	5
H	H	L	2
H	H	H	4

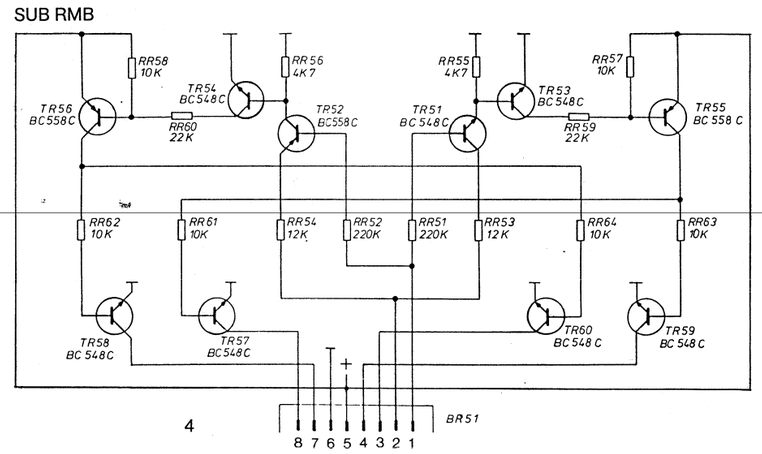
Stand by-platte / Stand by board / Platine de secteur



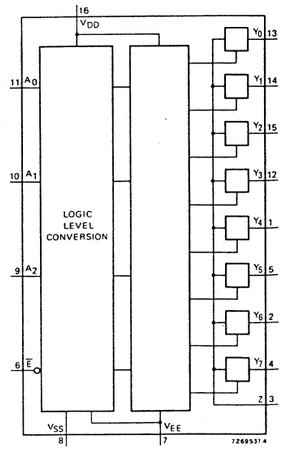
Treiberplatte / Driver board / Platine de driver



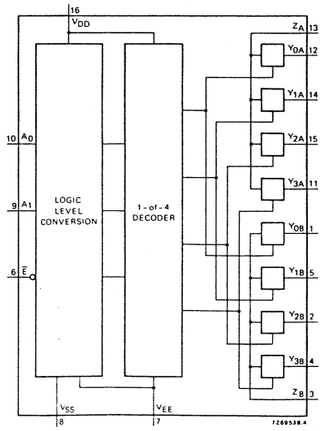
SUB RMB

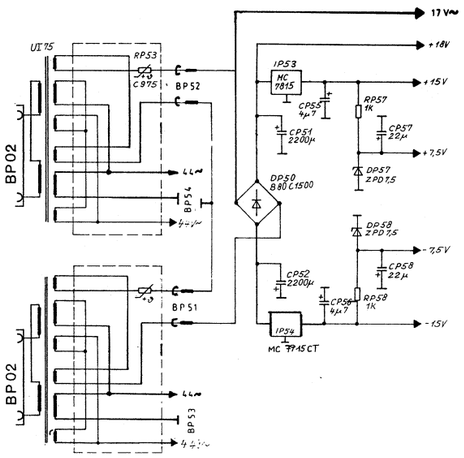


8-channel analogue multiplexer / demultiplexer



4-channel analogue multiplexer / demultiplexer





VOLUME grob

VOLUME fein

BASS

TREBLE

DRIVER

SUB RMB BR 51

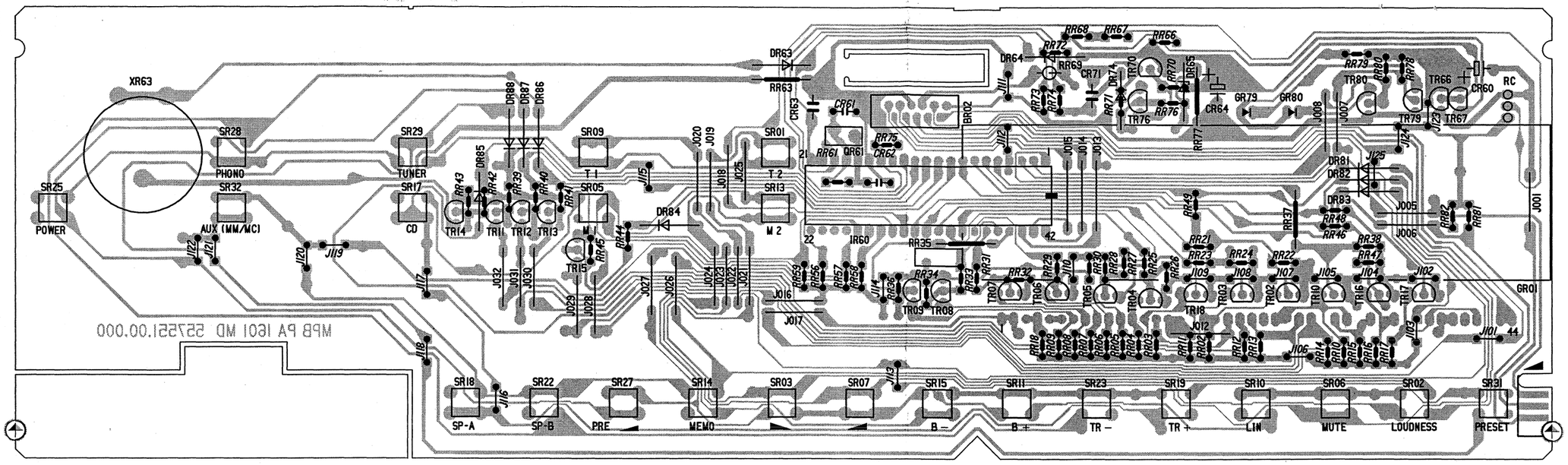
GAIN PHONO

LEVEL COURSE

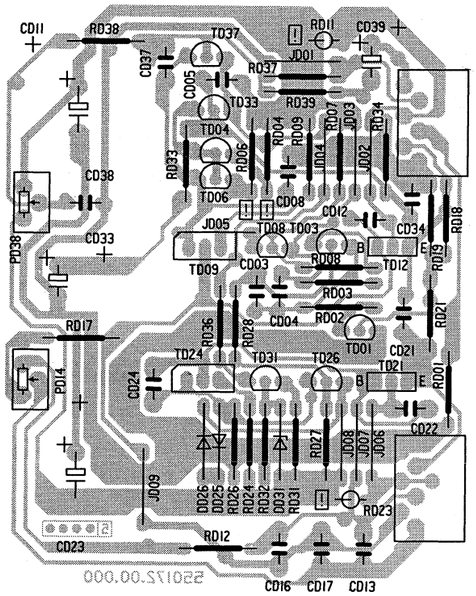
LEVEL FINE

SYMETRY

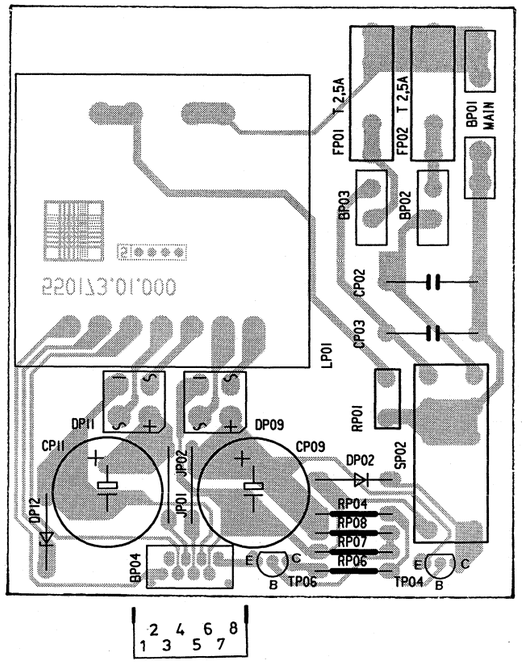
Display-Tastenplatte / Display-Keyboard / Platine de commande



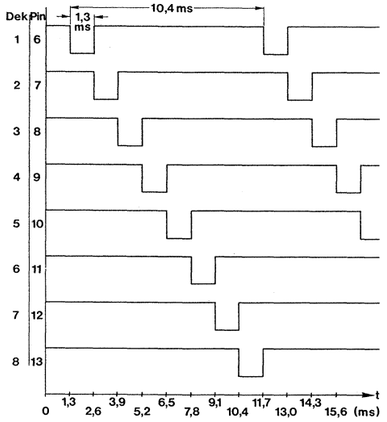
Treiberplatte / Driver board / Platine de driver

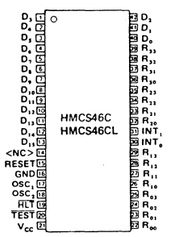


Stand by-platte / Stand by board / Platine de secteur



Pulse Diagram





Prozessor HD 44840 A 70 (IR 60)· Pinbelegung · Pin arrangement

Pin	Signal	
1		No connection
2 →	⌊	Balance L-CH
3 →	⌊	Balance R-CH
4 →	⌊	ON = H, OFF = L
5 →	⊔	TR 10 Display
6 →	⊔	Pulse Dekade 1
7 →	⊔	Pulse Dekade 2
8 →	⊔	Pulse Dekade 3
9 →	⊔	Pulse Dekade 4
10 →	⊔	Pulse Dekade 5
11 →	⊔	Pulse Dekade 6
12 →	⊔	Pulse Dekade 7
13 →	⊔	Pulse Dekade 8
14	⊔	No connection
15 ←	⌈	Reset
16		GND
17		Quarz
18		Quarz
19 ←		$\overline{\text{HTL}}$ 5 V
20	+ 5 V	V_{cc}
21	+ 5 V	V_{cc}
22 →	⌊	TR 54 Sound 1
23 →	⌊	TR 53 Sound 2
24 →	⌊	TR 52 Sound 3
25 →	⌊	TR 51 Sound 4
26 ←	⊔	Volume ±, Sound 1, 2, 3, 4
27 ←	⊔	Balance L/R-CH, Bass ±, Treble ±, Pre-Volume
28 ←	⊔	Loudn., Mute, Lin, Store, Sp. 2, Sp. 1, MM/MC
29 ←	⊔	Tape 2, Monitor 1, Tape 1, Monitor 2, CD, Phono, ON/OFF, Tuner
30 ←		Remote Control
31		GND
32 →	⊔	TR 02
33 →	⊔	TR 03
34 →	⊔	TR 04
35 →	⊔	TR 05
36 →	⊔	TR 06
37 →	⊔	TR 07
38 →	⊔	TR 08
39 →	⊔	TR 09
40 →		Clock = Pin 3
41 →		Data = Pin 2
42 →		STR = Pin 1

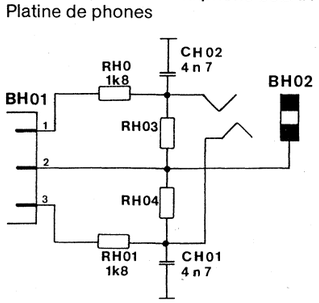
Bezeichnung · Signification:

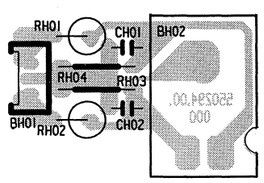
2 ←	Input
7 →	Output
⌈	Signal HIGH active
⌊	Signal LOW active

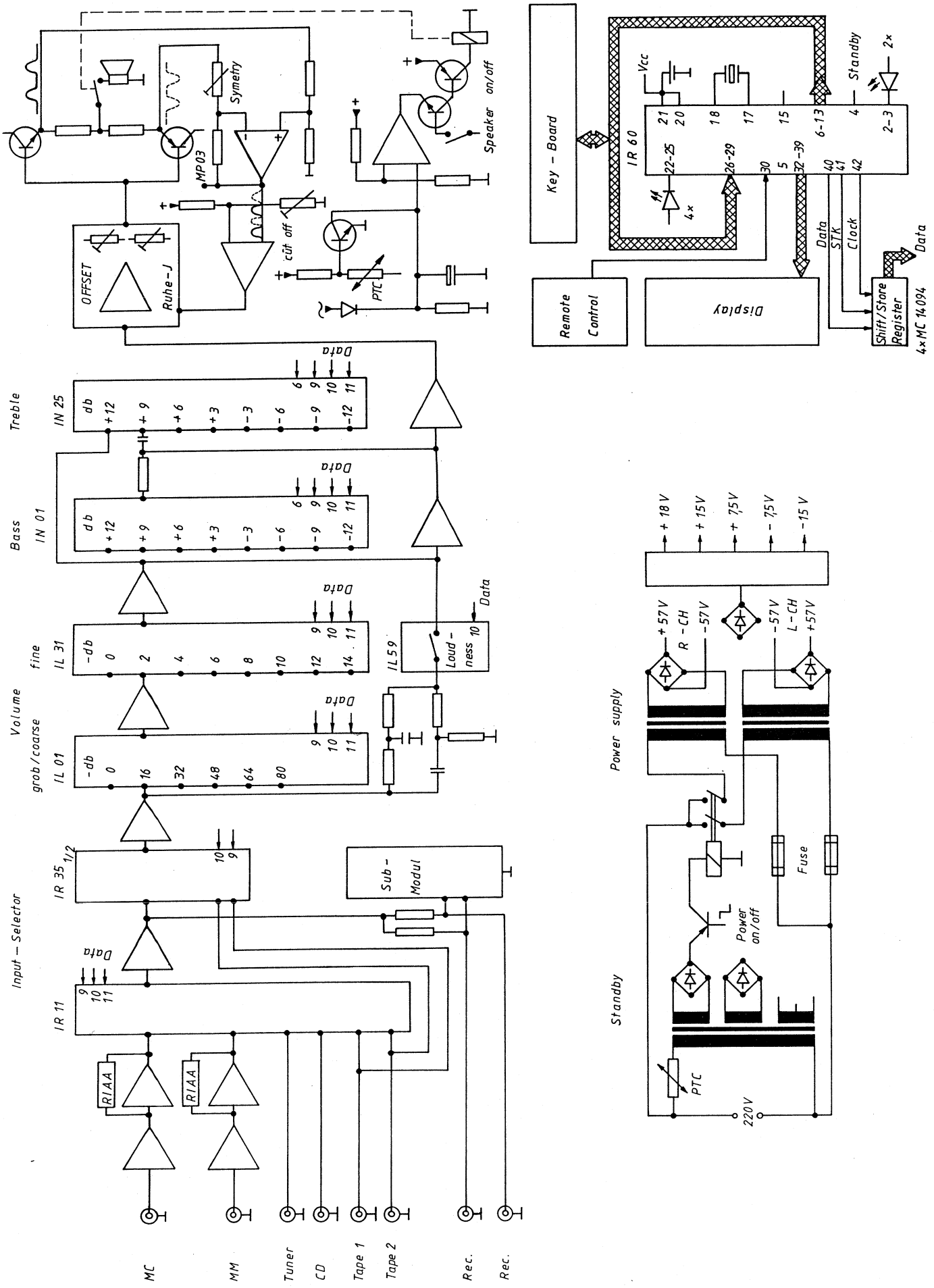
Display

IN 73
MC 14094

Kopfhörerplatte / Head phone board /
Platine de phones






Input – Selector
Volume
grob/coarse
fine
Bass
Treble
Data
Loud-
ness
Sub-
Modul
Symetry
Speaker on/off
MP03
cut off
PTC
OFFSET
Ruhe-J
RIAA
MC
MM
Tuner
CD
Tape 1
Tape 2
Rec.
Rec.
Key – Board
Remote
Control
Display
IR 60
Vcc
Standby
Data
STK
Clock
Shift/Store
Register
4×MC 14094
Power supply
Standby
Power
on/off
Fuse
PTC
220V
R – CH
L – CH

Ersatzteile · Replacement parts · Pièces détachées · CV 441

Pos.	Art.-Nr.	Bezeichnung
		Frontblende
1	281 768	Frontprofil
2	281 714	Buchse (für Pos. 8)
3	281 776	Klebeschild (Frontblende)
4	282 044	Fenster
5	281 722	Fensterträger
6	281 773	Druckknopf (Power)
7	281 774	Druckknopfpaar (Phono – Monitor 2)
8	279 482	Druckknopf
9	281 711	Seitenteil L
10	282 046	Seitenteil R
11	281 769	Klappenprofil
12	281 777	Klebeschild (Klappe)
13	281 713	Lasche (OPEN)
14	281 859	Magnet für Klappe
15	281 778	Rastpoti
16	281 783	Potihalter
17	281 775	Drehknopf
BH 02	279 479	**Kopfhörerbuchse**
18	281 835	Befestigungsbügel
20	279 896	Fuß
21	279 489	Gehäuseblech
22	279 472	**Netztrafo**
23	279 476	Netzbuchse
30	279 475	**Grundplatte**
31	279 510	Cinch-Buchsenleiste
32	279 511	Anschlußklemmen
CP 31	279 495	Elyt-Kondensator 10 my/ 63 V
CP 34	279 495	Elyt-Kondensator 10 my/ 63 V
DB 56	223 906	Diode 1 N 4148
DB 61	279 496	Diode ZPD 5 V 1
DB 62	279 496	Diode ZPD 5 V 1
DB 67	223 906	Diode 1 N 4148
DB 70	223 906	Diode 1 N 4148
DP 21	279 497	Gleichrichter B 80 C 1500
DP 23	279 498	Diode ZPD 7 V 5
DP 27	279 498	Diode ZPD 7 V 5
DP 31	279 499	Gleichrichter D 5 FB 20
DP 32	279 499	Gleichrichter D 5 FB 20
DP 50	279 497	Gleichrichter B 80 C 1500
DP 57	279 498	Diode ZPD 7 V 5
DP 58	279 498	Diode ZPD 7 V 5
DR 35	223 906	Diode 1 N 4148
IB 19	279 500	IC LM 833
IB 31	268 409	IC LM 393 P
IB 39	268 409	IC LM 393 P
IB 60	279 501	IC MC 1741 CP 1
IC 21	236 299	IC RC 4558 D
IC 22	236 299	IC RC 4558 D
IC 29	236 299	IC RC 4558 D
IC 30	236 299	IC RC 4558 D
IL 1	279 502	IC MC 14051 BCP
IL 2	279 502	IC MC 14051 BCP
IL 23	279 500	IC LM 833
IL 31	279 502	IC MC 14051 BCP
IL 32	279 502	IC MC 14051 BCP
IL 51	279 500	IC LM 833
IL 59	279 503	IC MC 14052 BCP
IN 1	279 502	IC MC 14051 BCP
IN 2	279 502	IC MC 14051 BCP
IN 25	279 502	IC MC 14051 BCP
IN 26	279 502	IC MC 14051 BCP
IN 43	279 500	IC LM 833
IN 55	279 500	IC LM 833
IN 70	276 039	IC MC 14094 BCP C-MOS
IN 73	276 039	IC MC 14094 BCP C-MOS
IP 53	238 347	IC MC 7815
IP 54	280 491	IC MC 7915 CT
IR 1	279 500	IC LM 833
IR 2	279 500	IC LM 833
IR 11	279 502	IC MC 14051 BCP
IR 12	279 502	IC MC 14051 BCP
IR 35	279 503	IC MC 14052 BCP
PB 19	279 504	Steller 1 K
PB 20	279 504	Steller 1 K
PB 29	279 505	Steller 470
PB 30	279 505	Steller 470
RB 49	279 506	Thermoschalter
RB 50	279 506	Thermoschalter
SB 67	279 507	Relais AZ 732
SB 70	279 507	Relais AZ 732
SR 35	279 529	Relais
TB 1	279 508	Transistor BDV 67 D
TB 4	279 508	Transistor BDV 67 D
TB 9	279 509	Transistor BDV 66 D
TB 12	279 509	Transistor BDV 66 D

Pos.	Art.-Nr.	Bezeichnung
TB 48	244 891	Transistor BC 547 B
TB 53	244 891	Transistor BC 547 B
TB 54	244 891	Transistor BC 547 B
TB 61	244 891	Transistor BC 547 B
TB 62	244 891	Transistor BC 547 B
TB 65	224 729	Transistor BC 327
TB 66	224 729	Transistor BC 327
TC 7	280 964	Transistor BC 650 S
TC 8	280 964	Transistor BC 650 S
TC 13	280 964	Transistor BC 650 S
TC 14	280 964	Transistor BC 650 S
TC 53	280 964	Transistor BC 650 S
TC 54	280 964	Transistor BC 650 S
TD 14	240 782	Transistor BC 546 B
TD 16	240 782	Transistor BC 546 B
TR 35	244 891	Transistor BC 547 B
TR 41	244 891	Transistor BC 547 B
TR 51	244 715	Transistor BC 548 C
TR 52	276 032	Transistor BC 558 C
TR 53	244 715	Transistor BC 548 C
TR 54	244 715	Transistor BC 548 C
TR 55	273 032	Schieber
TR 56	276 032	Transistor BC 558 C
TR 57	244 715	Transistor BC 548 C
TR 60	244 715	Transistor BC 548 C
40	282 047	**Anzeige / Tastenplatte**
DR 63	223 906	Diode 1 N 4148
DR 64	279 521	Diode 1 N 4150
DR 65	279 496	Diode ZPD 5 V 1
DR 74	223 906	Diode 1 N 4148
DR 81	223 906	Diode 1 N 4148
DR 88	223 906	Diode 1 N 4148
GR 1	279 522	Display FV-045
GR 79	282 048	LED TLHR 6201
GR 80	282 048	LED TLHR 6201
IR 60	281 970	IC UP HD 44840 / B 08
QR 61	279 525	Keramikfilter 800 kHz
SR 1	276 045	Schalter
SR 31	276 045	Schalter
TR 2	244 892	Transistor BC 557 B
TR 18	244 892	Transistor BC 557 B
TR 66	231 062	Transistor BC 328
TR 67	238 894	Transistor BC 338
TR 70	277 937	Transistor BC 558
TR 76	244 715	Transistor BC 548 C
TR 79	277 937	Transistor BC 558
TR 80	277 937	Transistor BC 558
XR 63	279 527	Akku LM 2425
50	279 473	**Standby-Platte**
DP 2	223 906	Diode 1 N 4148
DP 9	279 497	Gleichrichter B 80 C 1500
DP 11	279 497	Gleichrichter B 80 C 1500
DP 12	280 969	Diode ZPY 10 / BZX 85 / C 10
DR 2	223 906	Diode 1 N 4148
FP 1	247 842	Sicherung 2,5 A / 250 V T
FP 2	247 842	Sicherung 2,5 A / 250 V T
LP 1	280 965	Trafo
RP 1	280 967	Kaltleiter C 883
SP 2	280 966	Relais 12 V
TP 4	244 892	Transistor BC 557 B
TP 6	244 891	Transistor BC 547 B
60	280 492	**Treiberplatte**
DD 25	279 521	Diode 1 N 4150
DD 26	279 521	Diode 1 N 4150
DD 31	249 857	Diode ZPD 12
PD 14	279 520	Steller 200 K
PD 38	280 968	Steller 100 K
TD 1	240 782	Transistor BC 546 B
TD 3	279 515	Transistor BF 423
TD 4	262 496	Transistor BC 556 B
TD 6	262 496	Transistor BC 556 B
TD 8	262 496	Transistor BC 556 B
TD 9	279 516	Transistor BF 870
TD 12	279 517	Transistor MJE 340
TD 21	279 518	Transistor MJE 350
TD 24	279 519	Transistor BF 869
TD 26	240 782	Transistor BC 546 B
TD 31	240 782	Transistor BC 546 B
TD 33	240 782	Transistor BC 546 B
TD 37	240 782	Transistor BC 546 B
70	279 490	**IR-Empfänger**
71	281 349	Halteklammer
	279 491	Netzkabel
	279 493	Faltschachtel
	282 049	Seitenteil
	281 858	Bedienungsanleitung

Änderungen vorbehalten! Subject to change! Sous réserve de modification!